ASHRAE: Engineering for Sustainability

Sustainability

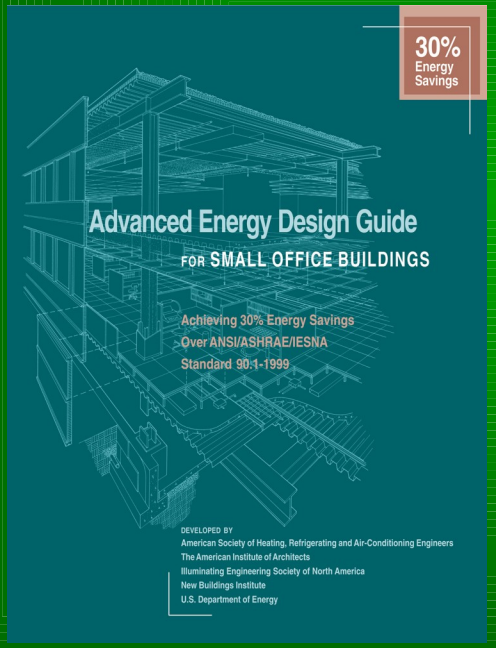
- Concept of maximizing the effectiveness of resource use while minimizing the impact of that use on the environment
- More than a design technique – also involves contractors, owners, facility managers & operators
- ASHRAE’s technology provides an efficient, healthy & comfortable built environment

ASHRAE is the “engineering engine” that drives sustainability

ASHRAE's Sustainability Efforts

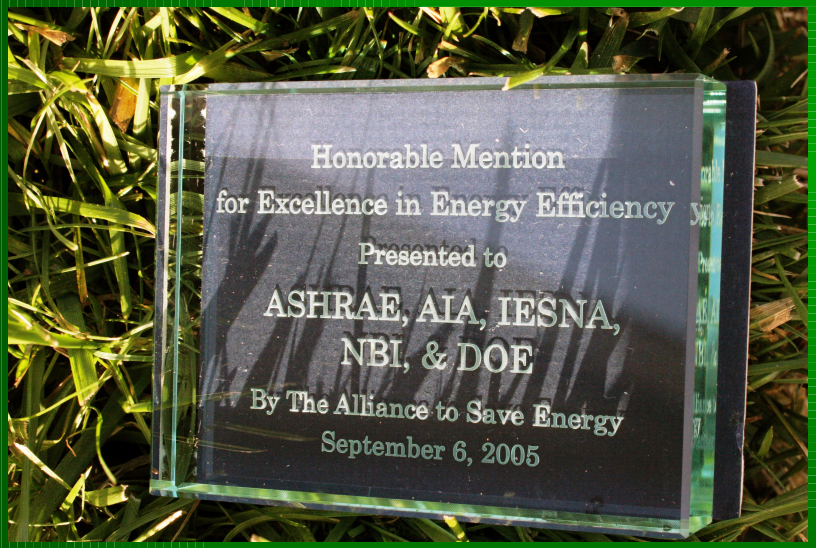
- Standard 90.1
- Advanced Energy Design Guides
- Research Strategic Plan
- Outreach – AIA, USGBC & IESNA
  + GreenGuide
  + Performance of bld

Advanced Energy Design Guide



- Presents *a way, but not the only way* to build energy efficient buildings
- Average 38% energy savings when compared to Standard 90.1-1999
- 30% progress toward a Net-Zero Energy use building

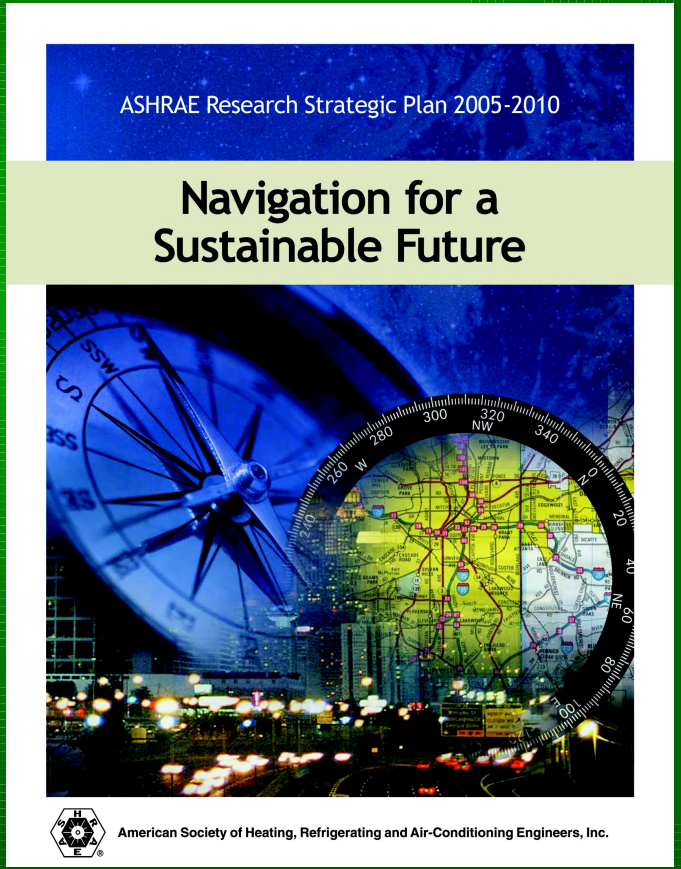
Advanced Energy Design Guide



- Recognized by three organizations –ASE, USGBC & SBIC
- Next guides in 30% Series – Retail & K-12 buildings
- 50% Series
- 70% Series

Strategic Research: Accomplishment Plans

- Guide for a sustainable future
- Emphasizes sustainability and renewable energy applications
- IAQ; tools and applications; and equipment, components and materials included


ASHRAE Research Strategic Plan 2005-2010
Navigation for a Sustainable Future
American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc.

ASHRAE Standard 90.1

- Developed in response to 1970s energy crisis
- Referenced in 2005 Federal Energy Policy Act
- Goals for 2007 standard:
  + Align with economic realities
  + Easier to use
- Performance-based Standard

Outreach

- Cooperative efforts in developing standards and conducting leading-edge research
  - U.S. Green Building Council
  - American Institute of Architects
  - Illuminating Engineering Society of North America
- GreenGuide 2nd Edition – Oct. 2006
- Performance of Bldgs – Energy, Water, IAQ & Comfort